

CLAIMS

1. An injection device comprising an outer housing inside which is located a barrel for holding a dose of a medicament;
a needle at one end the barrel and fixed with respect thereto, the needle and barrel being
5 such that at least part of the needle is axially moveable in and out of said outer housing but is biased to be normally wholly inside said housing;
a plunger, axially moveable within the barrel;
an inner housing intermediate the outer housing and the barrel and plunger; and
an energy source in communication with said inner housing,
10 wherein the inner housing is moveable by the energy source between three positions, namely
a first position in which the inner housing is in communication with both the plunger and the barrel such that, in use, the plunger and barrel are movable axially so as to move at least part of said needle out of the outer housing;
15 a second position in which the inner housing is in communication with the plunger but not the barrel such that, in use, said plunger is movable axially into said barrel so as to expel medicament through the needle; and
a third position in which the inner housing is in communication with neither the plunger nor the barrel such that, in use, the plunger and barrel are able to retract in order to
20 retract the needle into the outer housing.
2. An injection device as claimed in claim 1 wherein said inner housing includes one or more flexible tags, biased radially inwardly by communication with said outer housing.
3. An injection device as claimed in claim 2 wherein one or more of said tags are
25 situated at the rear end of the inner housing and are biased radially inwardly into communication with the plunger.
4. An injection device as claimed in claim 3 wherein each rear tag is moveable out of communication with the plunger when aligned with a corresponding recess in the outer housing.
5. An injection device as claimed in claim 4 wherein each rear tag is substantially
30 T-shaped.

6. An injection device as claimed in claim 2 wherein one or more of said tags are situated at the forward end of the inner housing and are biased radially inwardly into communication with the barrel.

7. An injection device as claimed in claim 6 wherein each forward tag is moveable
5 out of communication with the barrel when aligned with a corresponding recess in the outer housing.

8. An injection device as claimed in claim 7 wherein each rear tag is substantially L-shaped.

9. An injection device as claimed in any of the preceding claims wherein said
10 energy source is a compressed gas.

10. An injection device as claimed in any of the preceding claims further including means for allowing the inner housing to move axially only forward with respect to the outer housing.

11. An injection device as claimed in claim 10 wherein said means is an arrangement
15 of serrations intermediate the housings.

12. An injection device as claimed in any of the preceding claims wherein said needle is biased to be normally wholly inside said housing by means of a spring intermediate the barrel and the outer housing.

13. An injection device as claimed in any of the preceding claims wherein said
20 needle, barrel and plunger are removable from said device.

14. An injection device as claimed in any of the preceding claims further including a removable needle cover which protects the needle during storage before use.

15. An injection device as claimed in claim 14 wherein said needle cover includes means for pulling a protective rubber sheath or the like from said needle when said needle cover
25 is removed from the device.

16. An injection device substantially as described herein with reference to and as illustrated in any appropriate combination of the accompanying drawings.

17. A method of delivering an injection using an injection device as described in any of the preceding claims.